Energy Policy Update

NOVEMBER 12, 2013

The Energy Policy Update electronic newsletter is published by the Arizona Governor's Office of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by community outreach personnel. For inquiries, call 602-771-1143 or toll free to 800-352-.5499. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

UPCOMING WEBINARS
November 21: Tools for Designing & Implementing Better Clean Energy Financing Programs
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The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

Apple to Create Thousands of Jobs in Solar-Powered Arizona Sapphire Plant

[Forbes, Nov. 5] Apple is making good on its promise to boost manufacturing in the U.S., and plans to open a new plant in Mesa, Arizona, that will create more than 2,000 jobs in engineering, manufacturing and construction. The new factory will make components for its products, including sapphire glass used in Apple smartphones to cover camera lenses and the home buttons of the new Touch ID-equipped iPhone 5S. Sapphire's scratch-resistant nature also makes it a potential choice to cover an entire smartphone or tablet screen, which may spell bad news for Corning, the maker of competitive Gorilla glass. On a side note, sapphire glass is also widely used in upscale wristwatches, which Apple could use in its rumored smartwatch. The Arizona plant is an abandoned solar power company (First Solar First Solar) building in the Phoenix suburb of Mesa that will run on 100 percent renewable energy from day one, relying on solar and geothermal power.

Arizona Finishes 12th in National Ranking on Energy-Efficiency Policies

[Cronkite News Service, Nov. 7] WASHINGTON – Arizona is the 12th-most energy-efficient state in the nation this year, the same position the state held last year, according to rankings released Wednesday by the American Council for an Energy-Efficient Economy. The state's utility policies were its greatest strength, scoring twice as high as the national median score. Much of that advantage came from Arizona's Energy Efficiency Resource Standard, set in 2010 by the state Corporation Commission, said Annie Downs, an ACEEE research analyst. "The Energy Efficiency Resource Standard is one of the most comprehensive policy efforts that a state can put forward," she said in a conference call to announce the rankings Wednesday. Arizona's Energy Efficiency Resource Standard requires utilities with annual revenue over $5 million to institute energy-saving programs that reduce consumption from year to year. The program started in 2011, with a requirement that utilities show they saved 1.25 percent of the previous year's sales, using their choice of energy-saving programs. By the end of 2013, utilities must have saved at least 5 percent of their 2012 energy sold and by 2020 the program will top out at 22 percent savings in energy consumption from the previous year's levels.

ASU-Led National Project Aims at Solar Cell Advances

[ASU News, Nov. 5] A national project promising a significant advance in the technology

for converting sunlight into electricity will be led by a team of Arizona State University engineers. With support of a $3.5 million, three-year grant from the U.S. Department of Energy's SunShot Initiative, the team will develop new ultra-thin silicon solar cells designed to increase the amount of electricity that can be produced through direct conversion of sunlight. It's one of an array of projects funded recently by $60 million in SunShot Initiative grants intended to help make solar energy economically competitive with other energy sources, advance the integration of solar energy into the nation's energy grids and support a growing U.S. solar workforce. The ASU team and its partners will achieve higher efficiency by developing a new silicon solar cell architecture. The cells will incorporate new design approaches that partner crystalline silicon with carrier-selective contacts. This will enable the novel cell design to circumvent the limitations of current silicon solar cells and allow low-cost silicon to achieve its full potential.

Expense of Solar Battle in Millions

[Arizona Republic, Nov. 6] Pinnacle West Capital Corp. has spent $3.7 million on advertising and other communication efforts to change its solar subsidies this year, while the solar industry has spent about $436,000 fighting the changes. The amounts include advertising, lobbying and contributions to outside groups to assist on the matter. A state regulator last week ordered Pinnacle West, which owns Arizona Public Service Co., and the Alliance for Solar Choice to report their estimated expenses on the solar issue. In addition, a national organization called the Edison Electric Institute representing investor-owned utilities launched a $520,000, 10-day television campaign this week backing APS. Conflicting ads have flooded the metro Phoenix market as APS has sought to reduce the credit it pays customers with solar systems for the excess electricity they generate. Arizona Corporation Commissioner Bob Burns said he was troubled by advertising on the matter. He is one of five elected commissioners who set utility rates. "The PR campaign, this street fight, has misled voters," Burns said last week. Commissioners are expected to meet next week to address the solar issue, and the spending from all the groups involved probably will continue through those meetings.

Governor Jan Brewer Welcomes Apple to Arizona

New manufacturing operation to create 700-plus quality jobs

[Arizona Governor's Office, Nov. 4] PHOENIX – Governor Jan Brewer and the Arizona Commerce Authority today celebrated a major announcement that Apple has chosen Mesa, Arizona as the location of its newest U.S. manufacturing facility. This will create at least 700 quality jobs in the first year and generate significant capital investment. The project also will produce approximately 1,300 construction and other associated jobs for the people of Arizona. "Apple is indisputably one of the world's most innovative companies and I'm thrilled to welcome them to Arizona," said Governor Brewer. "Apple will have an incredibly positive economic impact for Arizona and its decision to locate here speaks volumes about the friendly, pro-business climate we have been creating these past four years. Their investment in renewable energy will also be greening our power grid, and creating significant new solar and geothermal power sources for the state. As Governor, I've worked hard to demonstrate that Arizona is open for business. Today's news is proof that's paying off." Apple's announcement is the culmination of a tremendous amount of hard work and a statewide collaborative effort led by the Arizona Commerce Authority -- chaired by Governor Brewer -- and in conjunction with partners at Salt River Project, the Greater Phoenix Economic Council, the City of Mesa and Maricopa County.

TUSD Starting Project to Install Solar Power at 43 Campuses

[Arizona Daily Star, Nov. 6] The Tucson Unified School District is bringing solar energy to 43 campuses, with a goal of reducing its carbon footprint while potentially saving more than $11 million over the next 20 years. The solar panels will generate about 80 percent of the electricity required at each site. TUSD will not be responsible for the operation, maintenance or monitoring costs of the system at each school. They will be owned Constellation, a nationwide solar energy company. TUSD will pay only for the energy produced by the systems. The deal will save the district money because the

Constellation rate is less than what the district now pays Tucson Electric Power. TEP will continue to supply the school's electricity when the solar panels are not producing enough. Although the district already has 17 school sites with solar systems, the installation of 38,000 solar panels is seen as the first step to significantly reduce electricity use, said TUSD spokeswoman **Cara Rene**. "Being more green, which is obviously better for the planet, and the substantial cost savings are key for TUSD in pursuing this," Rene said. The 18-month project is expected to save TUSD about $170,000 in the first year and more than $11 million in energy costs over the life of the project. Construction will be done in phases, starting in the first quarter of 2014. The first sites to go solar will be Erickson, Gale, Henry, Marshall, Soleng Tom and Wheeler elementary schools, and Secrist Middle School. Work is expected to be completed in 2015.

ALTERNATIVE ENERGY AND EFFICIENCY

DOE's AFLEET Tool: Alternative Fuel Analysis in a Simple Spreadsheet

[NGT News, Nov. 5] The U.S. Department of Energy and **Argonne National Laboratory** have developed a tool that enables DOE Clean Cities groups and their stakeholders to objectively assess how alternative fuel vehicles and other advanced transportation technologies can affect fleets' financial and environmental performance. The Alternative Fuel Life-Cycle Environmental and Economic Transportation (**AFLEET**) tool is designed to estimate petroleum usage, greenhouse gas emissions, air pollutant emissions and the cost of ownership of light- and heavy-duty vehicles. Historical data from the Clean Cities Alternative Fuel Price Report and American Recovery and Reinvestment Act projects comprise the tool's key sources for providing cost estimates.

Massachusetts Most Energy-Efficient State in 2013 with California Close Behind at #2, Mississippi is Most Improved

Top 10 States Ranked in Energy Efficiency Scorecard: MA, CA, NY, OR, CT, RI, VT, WA, MD, and IL
5 States Most Needing Improvement **:** *ND, WY, SD, AK, MS*
5 Most Improved States: MS, ME, KS, OH, and WV

[ACEEE website, Nov. 6] Washington, D.C. – Energy efficiency measures are thriving in state capitals around the United States, with several states---including Mississippi, Connecticut, Illinois, and West Virginia---taking major steps that moved them up the ranks in the seventh annual edition of the *State Energy Efficiency Scorecard* released by ACEEE. For the first time in the history of the *State Scorecard*, the 2013 ranking of the states is being released with the participation of a U.S. Department of Energy secretary, Dr. Ernest Moniz, along with a top elected official of a state, Massachusetts Governor Deval Patrick. Available online at http://aceee.org/state-policy/scorecard, the *State Scorecard* shows that the top 10 states for energy efficiency are: Massachusetts, California, New York, Oregon, Connecticut, Rhode Island, Vermont, Washington, Maryland, and Illinois. Massachusetts retains the top spot for the third year in a row based on its continued commitment to energy efficiency under its Green Communities Act. In California, requirements for reductions in greenhouse gas (GHG) emissions have led it to identify several strategies for smart growth, keeping the state in a top position at #2. Connecticut is also closing the gap due to passage of a major energy bill in 2013, and Illinois is making its first appearance in the top 10 this year, reaping the benefits of increased energy savings called for in the state's energy efficiency resource standard.

NREL Leads Charge to Standardize Solar Contracts

[Energy Manager Today, Nov. 6] Solar industry stakeholders have developed standard contracts to assist greater market penetration. The contracts are intended to help lower transaction costs and make it easier to access low-cost financing for residential and commercial solar power projects. The Solar Access to Public Capital (SAPC) working group, assembled by the Energy Department's National Renewable Energy Laboratory, is a consortium of solar energy developers, law firms, financiers and analysts with expertise in solar energy projects. The contracts cover residential leases and commercial

power purchase agreements (PPAs). Customizable contract templates are seen as ways to improve consumer transparency, increase private-sector investment, and lower the cost of solar energy to end-users. NREL believes the business opportunities will increase for national and regional solar developers with these templates. These will also help create tradable investment vehicles desired by pension funds and other institutional investors critical to scale the industry.

Will Small 48-Volt Lithium-Ion Battery Boost Start-Stop in U.S. Cars?

[Green Car Reports, Nov. 7] Better batteries help make cars greener--and not all of them are large lithium-ion packs for plug-in vehicles. Johnson Controls, the world's largest maker of lead-acid 12-Volt starter batteries, thinks small batteries can have a big impact on fuel efficiency too. The company has developed a compact battery pack that's no larger than a shoebox, the *Detroit News* reports. It's intended for use in "micro-hybrids", which are essentially cars equipped with engine-start stop systems. Johnson Controls uses the term more broadly, to describe vehicles with some amount of powertrain electrification that cannot drive on electric power alone. The small battery pack is tailor-made for these types of vehicles. The system consists of a 48-volt lithium-ion battery pack and a low-voltage lead-acid battery designed to work with regenerative braking and to support higher power loads. Johnson Controls says adding a micro-hybrid system can improve average fuel economy by 15 percent over a comparable vehicle without start-stop. The company also says its smaller pack will be relatively cheap--less than $1,000 per vehicle--which will make it more attractive to car makers. Its small size makes it easy to build into a wide range of vehicles with minimal design change.

ENERGY/GENERAL

Commercial PACE Financing Coming Back Strong

[CleanEnergyAuthority.com, Oct. 25] Cities and counties are increasingly focused on helping their resident businesses go green without requiring any upfront cash. Property Assessed Clean Energy (PACE) financing is making this dream a reality. The financing model allows property owners to borrow money from the local government, usually on a 20-year term, and repay it with a special property tax assessment that won't require a cash down payment or inhibit the businesses ability to borrow money for operations in the future. PACE was originally designed to help homeowners install rooftop solar panels, but Fannie Mae and Freddie Mac said they wouldn't support loans for properties with PACE financing, which essentially killed the program in the residential real estate arena.

EU Commission: Fossil Fuel, Nuclear Subsidies Distort Market

[EL&P, Nov. 5] Brussels — Subsidies for nuclear and fossil fuels distort competition between different energy sources and increase the overall cost to society of electricity generation, the European Commission stated today in a series of nonbinding documents on state intervention in energy markets. "EU taxpayers gave over EUR26 billion to fossil fuels in 2011, the documents show. It is disappointing to see the figure of EUR35 billion subsidy to nuclear energy being removed by the European Commission prior to publication," said Justin Wilkes, deputy CEO of the European Wind Energy Association (EWEA). "The European Commission is overly focused on renewable energy support mechanisms, while fossil fuels and nuclear continue to get far more public money," Wilkes said. "The Commission says it will launch a study of subsidy levels across the energy sector, but it must urgently require an immediate end to the huge subsidies given to fossil fuel and nuclear."

Utilities in Pain Selling Renewable Assets at Record Rate

[Bloomberg, Nov. 5] Wind farms and solar parks are changing hands at record rates, signaling both an increased taste for the assets among pension funds and hard times for utilities that are the biggest sellers. About 43 percent of the 275 deals completed in the power industry in the first nine months were for renewable generators, up from 37 percent in the year-earlier period, according to data compiled by Ernst & Young LLP. The

value of all the deals increased to $104 billion from $93 billion. Buyers from insurer Aviva Plc (AV/) to Danish fund PFA Pension A/S are seeking yields averaging about 6 percent on wind and solar, according to data compiled by Bloomberg. Utilities such as France's GDF Suez (GSZ) SA, Iberdrola SA (IBE) of Spain and Dong Energy AS have unloaded plants to build cash cushions as power prices slumped and competition increased from independent generators. Utilities "simply don't have the capital to allocate to endless volumes of renewable energy investment," said Ben Warren, who works in environmental finance at Ernst & Young, which is rebranding itself as EY. Assets are trading hands at "record rates" and sales will continue, he said. That also helps explain why investment in renewables is declining. After touching a record $317.2 billion in 2011, inflows of money into wind, solar, biofuel and energy-efficiency projects fell 11 percent last year and are on track to drop again in 2013, Bloomberg New Energy Finance estimates.

INDUSTRIES AND TECHNOLOGIES

Breaking the 50 GW Barrier in 2014: The Dawn of a New Solar PV Landscape

[Solarbuzz.com, Oct. 25] Global PV demand during 2014 is set to represent a new phase of growth for the solar PV industry. Not just because end-market demand is now forecast by NPD Solarbuzz to grow significantly to reach 45-55 GW, but because the fundamental issues driving end-market demand appear to be shifting away from legacy demand constraints. In part, this is being driven by the increased viability of solar PV across a wider range of global markets, compared to previous years. But simply assigning this to global grid-parity or end-market demand elasticity fails to capture the mechanics that are behind end-market growth in the solar PV industry today, and through 2014. Solar PV industry demand – on a global or macro basis – is a combination of system pricing levels, government and utilities favouritism for solar PV, and the collective scale and flexibility of the leading suppliers and developers to exploit short-term revenue opportunities. Historically, in the solar PV industry, demand forecasts were largely derived by adding up the sums of the individual served addressable markets (SAMs), with the total addressable market (TAM) set mainly by the specific constraints pertaining to a select group of countries: whether Germany, Italy or China reached start-of-year projections was often the deciding factor in final annual deployment.

Dioxide, Why Not Use It to Make Electricity?

A startup is trying to demonstrate that carbon dioxide can be used to make clean geothermal power economical and far more widespread.

[MIT Tech Review, Nov. 6] Capturing and storing carbon dioxide is key to meeting climate goals, but it's too expensive. Researchers might have found a way to economically capture carbon dioxide from power plants and permanently store it underground. The idea is to turn carbon dioxide storage sites into geothermal power plants. If it works, the technology would provide both the electricity needed to pump carbon dioxide underground and a source of revenue to offset the high cost of capturing carbon dioxide at power plants, compressing it, and shipping it to storage sites. That technology, known as carbon capture and storage, or CCS, will be essential for reducing greenhouse gas emissions. But because large-scale CCS would be prohibitively expensive, development of the technology has been too slow to meet climate change targets, according to the International Energy Agency (see "Will Carbon Capture Be Ready On Time?"). Next year, startups and researchers will begin testing whether it could be possible to defray those costs by putting the stored CO2 to use in a geothermal power plant.

Multicrystalline Silicon Modules to Dominate Solar PV Industry in 2014, According to NPD Solarbuzz

Solar PV module production set to reach 50 GW landmark in 2014, as leading PV manufacturers continue to resist common technology roadmap

[Solarbuzz.com, Oct. 25] Santa Clara, CA – The production of multicrystalline-silicon (c-Si) solar photovoltaic (PV) modules is set to dominate PV manufacturing during 2014,

with p-type multi c-Si technology accounting for 62% of all modules produced, according to the latest NPD Solarbuzz *PV Equipment Quarterly* report. Solar PV manufacturers are currently planning to increase module production by 25% in 2014, to 49.7 GW of modules, compared to the 39.7 GW of modules being produced in 2013. This is in line with the upgraded forecast from NPD Solarbuzz that end-market solar PV demand will reach 45-55 GW next year. “PV manufacturers continue to prioritize cost-reduction across the entire c-Si value-chain, with improvements in efficiency coming mainly from higher-quality multi c-Si wafers,” said Finlay Colville, vice president at NPD Solarbuzz. ”While there will inevitably be short-term supply issues throughout the year, polysilicon and wafer supply is considered adequate for 45-50 GW of c-Si module shipments in 2014. Chinese cell and module suppliers will continue to operate a flexible manufacturing strategy, with new capacity expected to come online during 2H’14.”

Solar Industry Moves to Next Level with Standardized Solar Contracts

[SustainableBusiness.com News, Nov. 7] In the latest effort to cut solar system costs, an industry working group has developed a standard solar contract that can be used across the industry. The Solar Access to Public Capital (SAPC) working group has developed a customizable contract template that can be used for residential lease contracts and for commercial power purchase agreements. "These template contracts should allow national and regional solar developers alike to increase business opportunities and enable the creation of tradable investment vehicles desired by pension funds and other institutional investors critical to scale the industry," says Paul Schwabe, an energy analyst with National Renewable Energy Lab (NREL). Standardization of these asset origination documents can enable more efficient pooling of the cash flows, as well as more effective evaluation from credit rating agencies and investors, says NREL. Assembled by the Department of Energy's National Renewable Energy Lab, the working group includes solar developers, law firms, financiers and solar analysts. The three-year effort is funded under DOE's Sunshot Initiative.

Storing Solar Energy for a Rainy Day

Lithium ion batteries aren't just for laptops and electric cars. They can power your home, too.

[FORTUNE, Nov. 6] One of the great -- and somewhat obvious -- shortfalls of solar power is that these systems cannot generate electricity when the sun's not shining. Now a number of companies including Tesla (TSLA), BYD, and Bosch are offering a new generation of lithium ion battery storage systems -- similar to those used to power electric cars -- to capture electricity generated by residential solar systems. Put a big battery in your home, and store the electricity generated by your rooftop system for a rainy day. The advantage of such systems is that in power outages, you can still have as much as a day or two of power to run your lights and appliances. You can also control when you use your electricity. In markets where utilities have variable pricing -- which means higher prices during peak hours when demand is high -- a homeowner can store his solar power when rates are cheap and use it when rates soar -- like on a hot afternoon when everyone has the air conditioning humming. There are advantages for utilities too. Having lots of batteries in the system helps power companies integrate renewables into the grid -- solar produces power intermittently, which means it surges in and out of the grid, causing instability. Storage helps level off these bumps and dips. Solar storage got a big boost in October when California regulators required utilities to procure 1.3 gigawatts of renewable storage capacity by 2020.

Tesla’s Third Model S Fire Brings Call for U.S. Inquiry

[Bloomber, Nov. 7] Tesla Motors Inc. (TSLA)’s third fire in five weeks involving a Model S suggests U.S. regulators need to examine the luxury electric car, a safety advocate said after a Tennessee accident. Shares of the Palo Alto, California-based carmaker led by Elon Musk slid as much as 9 percent to $137.62, after reports of the newest fire. That decline follows a 15 percent drop yesterday after the carmaker’s third-quarter results and fourth-quarter outlook disappointed investors. The two-day drop is the biggest intraday decrease since Dec. 27, 2010. The National Highway Traffic Safety Administration

"absolutely has to investigate" yesterday's Tennessee incident, Clarence Ditlow, executive director of the Center for Auto Safety, based in Washington, said in a telephone interview.

The New World of Electric Power Microgrids

Global Market to Triple by 2020; Hospitals Among Key Investors

[Sustainable Cities Network, Nov. 6 Microgrids that provide localized self-generation of electricity have been around for decades. However, the microgrid of today is new in how it continuously manipulates its load in order to fiscally optimize generation. It also provides improved security and reliability in the event of an interruption in the external grid (the macrogrid), due to natural or manmade disruptions. While there are a variety of policy, regulatory and economic challenges to overcome, many factors suggest microgrids will play an expanding role in the nation's power generation portfolio in the years to come. Energy efficiency and power quality stability are also among the benefits of microgrids. They are well suited for the use of renewable sources and energy storage, and thus support carbon and greenhouse gas reduction goals. By matching renewable generation to demand on the load side (locally) and utilizing energy storage, microgrids help reduce the variability in renewable generation delivered to the grid. A microgrid utilizes multiple electrical generators placed in strategic locations and adjusting load with its associated controls. It can operate as an exporting generator or as an autonomous grid, acting in parallel to the macrogrid. Microgrids employ sophisticated technology architecture and controls that change the loads in response to optimization in generation. They can also disconnect from the external grid if there are disruptive events in the regional transmission grid. Microgrids are designed to provide electricity and heat generation, if needed, for a particular mixed-use community that allows load shed to improve efficiency and overall reliability.

LEGISLATION AND REGULATION

Energy Department Invests $12 Million to Slash Red Tape and Speed Solar Deployment for Homes and Businesses

[Energy.gov, Nov. 6] WASHINGTON – As part of the Obama Administration's efforts to ensure America's continued leadership in clean energy and double renewable electricity generation once again by 2020, the Energy Department today announced eight teams to spur solar power deployment by cutting red tape for residential and small commercial rooftop solar systems. As part of the Department's Rooftop Solar Challenge, these teams will receive about $12 million– matched by over $4 million in outside funding – to streamline and standardize solar permitting, zoning, metering and connection processes for communities across the country. "Responsible development of all of America's rich energy resources is an important part of President Obama's Climate Action Plan and will help ensure America's continued leadership in clean energy," said Energy Secretary Ernest Moniz. "Today, solar modules cost about one percent of what they did 35 years ago, and permitting and interconnection are an increasingly large portion of overall solar system costs. Through the Rooftop Solar Challenge, the Energy Department is helping to make the deployment of solar power in communities across the country faster, easier and cheaper – saving money and time for local governments, homeowners and businesses."

President Obama Signs Climate Executive Order to Prepare the U.S. for Climate Impacts

[NASEO website, Nov. 4] On Friday, November 1, 2013, President Obama signed an Executive Order that calls on local governments, businesses, and individuals to, "improve climate preparedness and resilience; help safeguard our economy, infrastructure, environment, and natural resources; and provide for the continuity of executive department and agency operations, services, and programs."

Udall Cousins: Quarter of Utility Energy Should Be Renewable

[Denver Journal, Oct. 29] U.S. Sens. Mark Udall, D-Colo.,, who serves on the Senate

Energy and Natural Resources Committee, and Tom Udall, D-N.M., introduced legislation Tuesday to require utilities to generate 25 percent of their electricity from wind, solar and other renewable energy sources by 2025. The bill, which mirrors the Colorado Renewable Energy Standard that Mark Udall championed and helped pass in 2004, would set the first national threshold for utilities to provide a certain percentage of their electricity from renewable resources, gradually increasing the requirements up until 2025. "Clean energy creates jobs, spurs innovation, reduces global warming and makes us more energy independent. This common-sense proposal would extend Colorado's successful effort to expand the use of renewable energy alongside natural gas and coal to the entire nation," Mark Udall said in a news release. "I was honored to lead the effort to institute a renewable energy standard in Colorado and am proud to join with Sen. Tom Udall to bring this policy to the nation."

WESTERN POWER

Governor Brown Signs Bill Extending Alternative Transportation Program
[NASEO website, Nov. 4] Clean transportation and fuel projects in California just got the green light for continued funding, thanks to legislation recently signed into law by Governor Brown. Assembly Bill 8 (Perea) allows the Energy Commission's Alternative and Renewable Fuel and Vehicle Technology (ARFVT) Program to continue investing in innovative transportation and fuel technologies that help the state meet its energy, clean air, and climate-change goals. The bill extends the program to January 1, 2024, adding as much as $800 million for future investments in low-carbon fuels and vehicle technologies.

New Mexico Court Upholds Navajo Nation's Water Rights in San Juan Basin
President Shelly says decision allows Nation to focus on water needs of residents in New Mexico
[Navajo-Hopi Observer, Nov. 5] Window Rock, AZ – A New Mexico appeals court said the Navajo Nation has water rights in the San Juan River Basin. On Nov. 1, Judge James Wechsler, said that the rights were the product of a negotiated settlement the court previously determined to be "fair, reasonable and consistent with law and public policy." Navajo Nation President Ben Shelly hailed the decision as a major triumph for the Navajo Nation observing that, "water is a sacred element that is needed for life." "This decision recognizes the Navajo rights to water from the San Juan River,"

Vestas to Hire 'Hundreds' in Colorado as Wind Industry Rebounds
[Denver Business Journal, Nov. 7] Vestas Wind Systems says it will hire "hundreds" of new employees at three of its four manufacturing plants in Colorado due to a rush of orders for the company's wind turbines and a rebounding wind-power industry nationwide. Vestas, based in Denmark, already has hired hundreds of new employees this year at its Pueblo plant, where workers make the steel towers that hold the turbines aloft. Thursday, the company announced plans to hire hundreds more in the first half of 2014. The new employees will work primarily at its blade plants in Windsor and Brighton, although new workers are needed for Vestas' nacelles plant in Brighton, the comaid.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- Angel Investment Tax Credit Program - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here. LEARN MORE

- Arizona Innovation Accelerator Fund - The Arizona Innovation Accelerator Fund Program is an $18.2 million loan participation program funded through the U.S. Department of Treasury's SSBCI and managed by the Arizona Commerce Authority. The

goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona. LEARN MORE

- Arizona Innovation Challenge - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world. The ACA will award $1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from $100,000 to $250,000). LEARN MORE

- AZ Fast Grant - Enables Arizona-based technology companies to initiate the commercialization process. Total funds available for this grant round are $175,000. Maximum awards of $5,000 and $20,000 will enable companies to accomplish one of four scopes of work. LEARN MORE

- AZ Step Grant - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets. LEARN MORE

- Commercial/Industrial Solar Energy Tax Credit Program - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. LEARN MORE

- Healthy Forest - The primary goal of the Healthy Forest Enterprise Incentives Program is to promote forest health in Arizona. The program achieves this by proving incentives for certified businesses that are primarily engaged in harvesting, processing or transporting of qualifying forest products. LEARN MORE

- Job Training Program offers job-specific reimbursable grants for employers creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round. LEARN MORE

- Renewable Energy Tax Incentive Program offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round. LEARN MORE

- Research and Development Tax Credit is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue. LEARN MORE

Quality Jobs Tax Credit Program - The primary goal of the Quality Jobs Tax Credit program is to encourage business investment and the creation of high-quality employment opportunities in the state. The program accomplishes this goal by providing tax credits to employers creating a minimum number of net new quality jobs and making a minimum capital investment in Arizona. LEARN MORE

- **Bonds Administered by the Arizona Commerce Authority**
  - Private Activity Bonds (PAB) - Tax exempt bond financing, for federal purposes, offers an alternative financing mechanism for certain projects. LEARN MORE
  - Qualified Energy Conservation Bonds (QECB) - Tax credit bonds are

available as an alternative financing mechanism for certain green projects. LEARN MORE

Federal Programs

- Small Business Innovation Research (SBIR) Program - SBIR is a competitive program that encourages small businesses to explore their technological potential, as well as, providing incentive to profit from its commercialization. LEARN MORE
- Small Business Technology Transfer (STTR) Program - STTR is an important small business program that expands funding opportunities to meet the nation's scientific and technological challenges in the 21st century. LEARN MORE
- Work Opportunity - The Work Opportunity Tax Credit (WOTC) is a federal tax credit of up to $9,000 that Congress provides to private-sector businesses for hiring individuals from nine target groups who have consistently faced significant barriers to employment. LEARN MORE

Pollution Control Tax Credit - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.

Renewable Energy Production Tax Credit - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

Sales Tax Exemption for Machinery and Equipment
Exemptions are available for:

1. Machinery or equipment used directly in manufacturing, see ARS 42-5159(B)(1).
2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see ARS 42-5159(B)(4).
3. Machinery or equipment used in research and development, see ARS 42-5159(B) (14).

Questions can be directed to Christie Comanita (602-716-6791).

Solar Liquid Fuel Tax Credit - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

Database of State Incentives for Renewables and Efficiency (DSIRE)

- Arizona Incentives/Policies
- Federal Incentives/Policies
- Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- SunShot Initiative - Responses due November 20, 2014

- SBIR/STTR FY 2014 Phase II Release 1, Reference Number: DE-FOA-0001019 – Response Due Date: December 10, 2013 11:59:00 AM ES
- **NEW!** U.S. Dept. of Energy Solar Decathlon 2015, Funding Number: DE-FOA-0000959, Response Due Date, December 20, 2013
- Solid Waste Management Grant - Response due December 31, 2013
- Energy Frontier Research Centers – Response due by January 9, 2014
- **NEW!** Research and Development for Hydrogen Storage – Response due January 17, 2014
- Environmental Sustainability - Response due February 20, 2014
- Energy for Sustainability - Response due February 20, 2014
- Environmental Health and Safety of Nanotechnology - Response due February 20, 2014
- Particulate and Multiphase Processes- Response due February 20, 2014
- Thermal Transport Processes - Response due February 20, 2014
- SunShot "Race to the Roof" Initiative - Registration due October 31,2014
- Repowering Assistance Program – Ongoing
- Rural Business Enterprise Grants– Ongoing
- Rural Business Opportunity Grants– Ongoing
- Sustainable Agriculture Research and Education Grants – Ongoing
- Renewable Energy RFPs - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines

ENERGY-RELATED EVENTS

2013

- Power Generation Week
  November 12-14 Orlando, FL
- 2013 Transportation Summit
  November 15 (7:30am-9:00am) Chandler, AZ
- 2013 North American NGV Conference & Expo
  November 18-21 Atlanta, GA
- GreenBuild International Conference and Expo
  November 20-22 Philadelphia, PA
- Ecobuild America 2013
  December 9-13 Washington, D.C.
- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ

2014

- Energy, Utility & Environment Conference
  February 3-5, 2014 Phoenix, AZ
- 2014 Energy Outlook Conference
  February 4-7, 2014 Washington, DC
- Green Biz Forum 2014
  February 18-20, 2014 Phoenix, AZ
- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ